

DOCUMENT RESUME

ED 333 651

EC 300 405

TITLE Fetal Alcohol Syndrome and Fetal Alcohol and Other Drug Effects. A Guide for Teachers.

INSTITUTION New Jersey State Dept. of Education, Trenton. Div. of General Academic Education.

REPORT NO PTM-1007.00

PUB DATE Jan 91

NOTE 65p.

PUB TYPE Guides - Classroom Use - Teaching Guides (For Teacher) (052)

EDRS PRICE MF01/PC03 Plus Postage.

DESCRIPTORS Alcohol Abuse; Alcohol Education; *Congenital Impairments; *Curriculum; *Drug Abuse; Drug Use; Etiology; Learning Activities; Lesson Plans; *Pregnancy; Prenatal Influences; Prevention; Secondary Education; Smoking; *Special Health Problems; Substance Abuse

IDENTIFIERS *Fetal Alcohol Syndrome; New Jersey

ABSTRACT

This curriculum guide on Fetal Alcohol Syndrome (FAS) is intended to help meet New Jersey secondary-level learning objectives in the area of chemical health education. The guide is organized into six sections, each with a conceptual statement, content outline, specific objectives, and lesson plans. The six sections and corresponding major concepts are as follows: (1) "Fetal Alcohol Syndrome: What is It?" (FAS is a combination of characteristics in infants and children resulting from maternal drinking during pregnancy); (2) "History of Fetal Alcohol Syndrome: Pioneers of the 1970s, '80s, and Beyond" (FAS was formally identified as a syndrome in the U.S. in 1973); (3) "FAS is Only the Tip of the Iceberg: Alcohol-Related Birth Defects (ARBD)" (ARBD are less severe conditions caused by maternal drinking during pregnancy); (4) "Alcohol is Not the Only Problem: The Effects of Licit and Illicit Drugs on Pregnancy" (adverse effects of maternal consumption of any drug substance, including alcohol, tobacco, or medications); (5) "So You're Thinking about Getting Pregnant: Don't Drink or Take Drugs" (increasing evidence suggests drug and alcohol use by either parent prior to conception may have adverse effects); (6) "Prevention of Fetal Alcohol Syndrome and Fetal Alcohol and Other Drug Effects is the Goal: Education is the Answer." Also included are the text of the Surgeon General's Advisory on Alcohol and Pregnancy and a list of 12 resources. (DB)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED333651

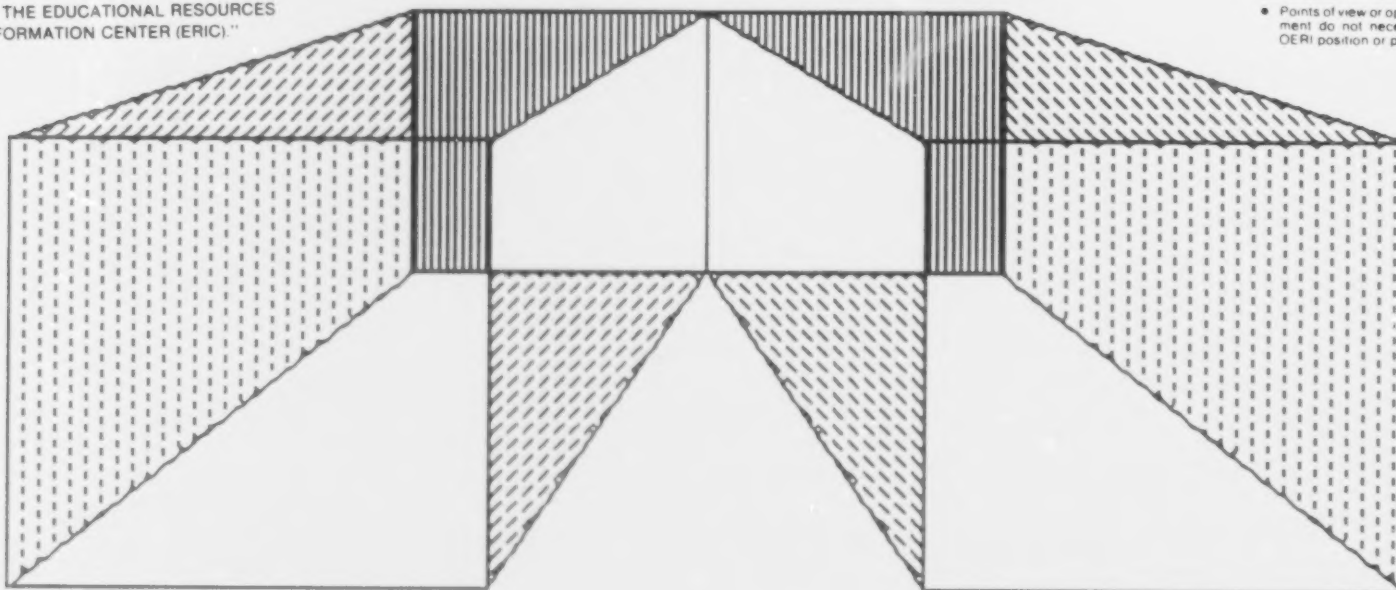
FETAL ALCOHOL SYNDROME AND FETAL ALCOHOL AND OTHER DRUG EFFECTS

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

*Richard
Vaspucci*

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

A GUIDE FOR TEACHERS



U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☒ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

NEW JERSEY STATE DEPARTMENT OF EDUCATION • DIVISION OF GENERAL ACADEMIC EDUCATION

EC 300 405

23

**FETAL ALCOHOL SYNDROME AND
FETAL ALCOHOL AND OTHER DRUG EFFECTS:**

A Guide for Teachers

John Ellis
Commissioner

Jacqueline L. Cusack
Acting Assistant Commissioner
Division of General Academic Education

New Jersey State Department of Education
225 West State Street
CN 500
Trenton, NJ 08625-0500

January, 1991

PTM # 1007.00

STATE BOARD OF EDUCATION

JAMES A. JONES.....	Teaneck
President	
ROBERT A. WOODRUFF.....	Elmer
Vice President	
S. DAVID BRANDT.....	Cherry Hill
BONNIE GREEN.....	Bargaintown
MAUD DAHME.....	Annandale
BETTY A. DEAN.....	East Orange
ANNE S. DILLMAN.....	Perth Amboy
RONALD K. BUTCHER.....	Pitman
ALICE A. HOLZAPFEL.....	Elizabeth
JOHN T. KLAGHOLZ.....	Seaside Park
NANCY SCHAELEN.....	Madison
DEBORAH P. WOLFE.....	Cranford
Representing the State Board of Higher Education	

John Ellis, Commissioner of Education
Secretary

Edward D. Goldberg, Chancellor of Higher Education
Ex-Officio

FOREWORD

The use of alcohol and other drugs among women of childbearing years is cause for concern:

- * Each year, 375,000 babies are born to mothers who use illicit drugs;
- * The incidence of Fetal Alcohol Syndrome (FAS) is approximately 1 to 3 per 1000 births in the United States;
- * A 1988 study by the National Institute of Drug Abuse showed that 30 percent of women in prime childbearing years who were surveyed had used illicit drugs in the past year; and
- * Intravenous cocaine abuse increases the risk of exposure to the AIDS virus. Thirty to 50 percent of pregnancies of HIV-infected mothers will result in an HIV-infected infant.

The net result of the use of alcohol and other drugs during pregnancy is a population of children at high risk for suffering medical, emotional, developmental, and behavioral problems throughout childhood. The good news, however, is that FAS, along with alcohol and other drug-related birth defects are entirely preventable. Education plays a vital role in their prevention.

The following guide, therefore, is provided for teachers to assist with district implementation of a chemical health education program. It is divided into six sections, each containing a conceptual statement, content outline, and specific learning objectives. Additionally, sample lesson plans are provided.

Districts are encouraged to take advantage of this instructional guide, as well as the resources listed at the end. The learning objectives contained herein can be an integral part of a comprehensive health education program.


John Ellis
Commissioner

ACKNOWLEDGMENT

The Department of Education thanks William V. Fassbender, Ed.D., C.A.C., for developing this document and Artist L. Parker, M.D., and Carol Kaslander from the Department of Health for reviewing this guide.

TABLE OF CONTENTS

	<u>PAGE</u>
Introduction	1
Rationale	1
Fetal Alcohol Syndrome: What Is It?	3
History of Fetal Alcohol Syndrome: Pioneers of the 1970s, 80s, and Beyond	7
FAS Is Only the Tip of the Iceberg: Alcohol-Related Birth Defects (ARBD)	10
Alcohol Is Not the Only Problem: The Effects of Licit and Illicit Drugs on Pregnancy	12
So You're Thinking about Getting Pregnant: Don't Drink or Take Drugs	16
Prevention of Fetal Alcohol Syndrome and Fetal Alcohol and Other Drug Effects is the Goal: Education is the Answer	17
Sample Lessons	21
Resources	31

INTRODUCTION

This curriculum guide on Fetal Alcohol Syndrome (FAS) is designed to expound on the specific learning objectives for secondary students contained in the chemical health education standards set by the New Jersey State Department of Education.

The guide provides educators with facts about FAS and presents a broadened series of learning objectives. The content is organized into six major areas, each beginning with a conceptual statement.

Rather than view the content in this guide as a "subject unto itself," readers should consider it for use with the district's comprehensive chemical health education, as required by N.J.A.C. 6:29. Before students can fully grasp the significance of FAS, they need to know the basic facts about conception, pregnancy, and infant and child development. They must also have knowledge of the effects of alcohol on the body and an understanding of chemical dependency and disease progression.

RATIONALE

Fetal Alcohol Syndrome (FAS) and Alcohol-Related Birth Defects (ARBD) are the conditions caused by the maternal use of alcohol during pregnancy that adversely affect the developing embryo and fetus. It can best be summed up by the statement: "A pregnant woman never drinks alone."

FAS is among the three most common birth defects associated with mental retardation. Only Downe Syndrome and Spina Bifida occur more often. FAS is the only one of the "top three" birth defects which is entirely preventable. This alone is why education about FAS and ARBD is vital.

Additionally, the number of children affected by their mothers' use of drugs during pregnancy is growing. An estimated that 11 percent of all newborns have been affected by illicit drugs, particularly cocaine, during pregnancy. All licit and illicit drugs, however, pose a threat to the developing fetus.

All women of childbearing age, therefore, must be taught the facts about drinking and drug use during pregnancy. Health care professionals, including physicians, as well as educators, must educate the public about FAS and fetal alcohol and other drug effects. School personnel, however, have an increasing responsibility in this regard. The recent statistics about teenage pregnancy, as well as teenage alcohol and other drug use and abuse, are alarming. The potential for adverse pregnancy outcomes makes the picture even more alarming.

FAS was first identified in 1972, so health care professionals, researchers, and educators involved with FAS are pioneers. Much remains to be learned about the effects of drinking and drug use during pregnancy. Only time will tell the long-term effects of FAS and fetal alcohol and other drug effects.

The curriculum guide on Fetal Alcohol Syndrome and fetal alcohol and other drug effects is organized to help educators accomplish the following goal:

STUDENTS WILL UNDERSTAND THAT THE USE OF ANY DRUGS, INCLUDING ALCOHOL, TOBACCO, OR PRESCRIPTION MEDICATION DURING PREGNANCY CAN HAVE DETRIMENTAL EFFECTS ON THE DEVELOPING FETUS, AS WELL AS INTERFERE WITH NORMAL INFANT AND CHILD DEVELOPMENT PATTERNS. THEY WILL FURTHER RECOGNIZE THAT EDUCATION PLAYS A VITAL ROLE IN REDUCING THE INCIDENCE OF FETAL ALCOHOL SYNDROME AND FETAL ALCOHOL AND OTHER DRUG EFFECTS.

The guide is organized into six sections, each with a conceptual statement, content outline, and specific objectives. When presenting this information, it is important to avoid taking a moralistic stance on alcohol and/or other drug use during pregnancy. Instead, what should be emphasized is that the health and well being of the unborn child are paramount. The six sections and corresponding conceptual statements are as follows:

I. Fetal Alcohol Syndrome: What Is It?

FETAL ALCOHOL SYNDROME (FAS) IS A COMBINATION OF CHARACTERISTICS FOUND IN NEWBORNS, INFANTS, AND CHILDREN THAT ARE THE RESULT OF MATERNAL DRINKING DURING PREGNANCY.

II. History of Fetal Alcohol Syndrome: Pioneers of the 1970s, '80s, and Beyond

ALTHOUGH PREGNANT WOMEN HAVE BEEN DRINKING ALCOHOLIC BEVERAGES FOR CENTURIES, FAS HAS BEEN FORMALLY IDENTIFIED AS A SYNDROME IN THE UNITED STATES ONLY SINCE 1973.

III. FAS is Only the Tip of the Iceberg: Alcohol-Related Birth Defects (ARBD)

ALCOHOL-RELATED BIRTH DEFECTS (ARBD) ARE CONDITIONS CAUSED BY MATERNAL DRINKING DURING PREGNANCY, YET ARE NOT AS SEVERE OR AS NOTICEABLE AS FAS.

IV. Alcohol Is Not the Only Problem: The Effects of Licit and Illicit Drugs on Pregnancy

ANY DRUG SUBSTANCE, INCLUDING ALCOHOL, TOBACCO, OVER-THE-COUNTER MEDICATION, OR PRESCRIPTION MEDICATIONS TAKEN DURING PREGNANCY CAN BE A CAUSE OF ADVERSE OUTCOMES OF PREGNANCY.

V. So You're Thinking about Getting Pregnant: Don't Drink or Take Drugs

There is increasing evidence which indicates that drug and alcohol abuse by both the prospective father and mother prior to conception may have an adverse effect on pregnancy, as well as pre- and postnatal development.

VI. Prevention of Fetal Alcohol Syndrome and Fetal Alcohol and Other Drug Effects is the Goal: Education is the Answer

EDUCATION ABOUT ALCOHOL USE AND ABUSE, AS WELL AS DRUG USE AND ABUSE, IS THE PRIMARY WEAPON IN PREVENTING FAS AND FETAL ALCOHOL AND OTHER DRUG EFFECTS.

I. Fetal Alcohol Syndrome:

What Is It?

FETAL ALCOHOL SYNDROME (FAS) IS A COMBINATION OF CHARACTERISTICS FOUND IN NEWBORNS, INFANTS, AND CHILDREN THAT ARE THE RESULT OF MATERNAL DRINKING DURING PREGNANCY.

OBJECTIVES	CONTENT OUTLINE
The students will be able to: 1. ...define the term "Fetal Alcohol Syndrome." 2. ...state the major symptoms of FAS. 3. ...discuss the relationship between physical and intellectual impairment in FAS. 4. ...identify the differences in growth impairment between FAS and normal newborns.	A. FAS is a combination of characteristics found in newborns, infants, and children. 1. Both pre- and postnatal growth deficiencies: a. smaller in length b. weigh less c. smaller head circumference FAS children do not "catch up" or improve with time. The more severe the facial dysmorphology, the greater the intellectual impairment. 2. Characteristic facial dysmorphology: a. flattened mid face b. small chin c. short eye slits d. shortened, up-turned nose e. sunken nasal bridge f. indistinct philtrum (groove between nose and upper lip) 3. Central Nervous system (CNS) involvement a. developmental delay b. intellectual deficiency (Average I.Q. of FAS children is 68.)

OBJECTIVES

CONTENT OUTLINE

5. ...state how alcohol enters the fetal blood, is metabolized and eliminated.
6. ...respond to the statement, "A pregnant woman never drinks alone."
7. ...describe in detail the possible effects of alcohol on the fetus in each trimester of pregnancy.
8. ...discuss why even socially acceptable drinking can be detrimental in early pregnancy;

- c. behavioral abnormalities, such as hyperactivity, short attention span, sucking and feeding difficulties, jittery and tremulous
4. Other organ involvement (e.g., kidney, heart).
- B. Alcohol crosses the placenta and enters the fetal circulation in the same proportion as the mother's blood alcohol concentration.
 1. Since the fetus has a smaller and less developed liver, the fetal blood alcohol concentration (BAC) decreases at a slower rate than the mother's BAC.
 2. "A pregnant woman never drinks alone."
- C. Effects of alcohol on fetal development.

There does not appear to be a safe time to drink during pregnancy. A general rule for the effects of drinking during pregnancy is: as the amount of alcohol on any given day rises, so does the risk of damage to the fetus. Even social drinking (one to two drinks per day or less) may be hazardous to the growth and the health of the fetus.

 1. First trimester - vulnerability for organogenesis (formation of organs).
 - a. Alcohol and the by-products of its metabolism are toxins which can have severe effects on the development of the fetus.
 - b. Many women drink before they know they are pregnant, thus causing possible impairment in organ development.
 - c. Many couples and families celebrate the news of the pregnancy with parties which may include drinking.

OBJECTIVES	CONTENT OUTLINE
9. ...describe how and why alcohol abuse in the last trimester of pregnancy can be dangerous. 10. ...state the effects of drinking on nursing mothers and their babies. 11. ...discuss why there does not appear to be a safe time to drink during pregnancy. 12. ...recognize how and why some newborns experience alcohol withdrawal shortly after birth. 13. ...discuss the prevalence of FAS in the U.S. and evaluate how that rate could be changed. 14. ...explain why not all babies born to drinking mothers have FAS. 15. ...identify nature's role in preventing some FAS cases.	2. Second trimester - risk for miscarriage or spontaneous abortion (miscarriage). 3. Third trimester - growth deficiencies. a. Especially in the brain. b. Drinking mothers have babies that weigh less than non-drinking mothers. D. Effects of drinking on nursing mothers: alcohol is found in mother's milk at lower levels than in mother's blood. Due to continued infant brain growth after birth, adverse effects are possible. E. Some newborns who were exposed to alcohol in utero have shown signs of alcohol withdrawal (jitters, irritability, disturbed sleeping patterns). F. Incidence of FAS in the United States: 1. The incidence of FAS is approximately 1 to 3 per 1,000 live births (1985). Among alcoholic women, 43% have an adverse outcome of their pregnancy - either miscarriage, still born, or FAS. 2. Heavy drinking and low tolerance may affect incidence: A FAS incidence of 9.8 per 1,000 has been observed among one particular high-risk American Indian population, though other American Indian populations were 1.4 and 2.0 per 1,000. 3. The prevalence of abusive drinking among women is greater than the incidence of FAS. Possible reasons may include:

OBJECTIVES	CONTENT OUTLINE
16. ...explain how and why FAS is entirely preventable; develop an appreciation for responsible behavior.	a. Timing of heavy drinking during critical stages of fetal development. b. Some fetuses may be genetically less susceptible to alcohol abuse than others (like some people). c. Pregnant women report a reduced desire and tolerance for drinking, especially during the first trimester. Also: (1) less desire to use caffeine and tobacco; (2) appearance of a built-in mechanism to protect the fetus from toxins. 4. FAS is among the three most common birth defects associated with mental retardation. Only Downe Syndrome and Spina Bifida occur more often.† There are more FAS births per year than cystic fibrosis, sickle cell anemia, and hemophilia <u>combined</u>.

II. History of Fetal Alcohol Syndrome:

Pioneers of the 1970s, '80s, and Beyond

ALTHOUGH PREGNANT WOMEN HAVE BEEN DRINKING ALCOHOLIC BEVERAGES FOR CENTURIES, FAS HAS BEEN FORMALLY IDENTIFIED AS A SYNDROME IN THE UNITED STATES ONLY SINCE 1973.

OBJECTIVES	CONTENT OUTLINE
The students will be able to: 1. ...discuss the early views of physicians and society as a whole on the subject of alcohol use and pregnancy.	A. Historical warnings about alcohol and pregnancy: 1. Eighteenth Century 1726 - England -- Cheap gin floods the country. Birth rates drop, and infant deaths increase. The College of Physicians petitions Parliament to control the distilling trade because parental drinking is "a cause of weak, feeble, and distempered children." 1787 - America -- Dr. Benjamin Rush spoke out against alcohol use by pregnant women because he feared the development of alcohol dependency (addiction) in the child. 2. Nineteenth Century 1834 - England -- A report to the British House of Commons warned that babies of alcoholic mothers sometimes had a "starved, shrivelled, and imperfect look." 1849 - England -- Dr. William B. Carpenter of the University of London reported on impaired mental development in the offspring of alcohol abusers. 1899 - England -- Dr. William Sullivan published the first organized scientific report on fetal alcohol effects. Of the pregnant, alcohol-drinking women he studied, 50 percent

OBJECTIVES	CONTENT OUTLINE
2. ...discuss how the scientific and medical communities have changed their views concerning pregnancy and the use of alcohol.	of the babies were dead by the age of two years, usually because of convulsions. 3. Alcohol and Pregnancy in the Twentieth Century 1910 - Finland -- Dr. Taav Laitenen studied 20,000 infants born to his patients. He observed that drinking alcohol (especially more than one beer per day) was connected with low birthweight. 1923 - England -- Dr. A. L. McIlroy observed that alcohol goes through the placenta. "Alcohol is a poison and the fetus of a chronic alcoholic mother is itself a chronic alcoholic, absorbing alcohol from the mother's blood and subsequently from her milk." 1957 - France -- J. Rouquette filed a thesis at the University of Paris clearly describing malformations, growth problems, and poor development of children whose mothers were alcoholics. 1968 - France -- Dr. Lemoine published a report of 127 children of alcoholic mothers. All these children had similar neurological problems, growth retardation, and facial characteristics. B. Yet, as recently as 1965, the use of alcohol was an accepted method for treating premature labor in the second trimester. C. Yet in 1973, alcohol was still recommended to women as "better than a sleeping pill."

OBJECTIVES	CONTENT OUTLINE
3. ...identify the specific significant events of the 1970s concerning the recognition of FAS as a public health problem. 4. ...discuss why physicians, researchers, educators, and public health workers are considered pioneers in the prevention of FAS. 5. ...quote the Surgeon General's statement of 1981 and analyze the impact it has had on society as a whole.	D. In 1973, Dr. Kenneth Jones and his associates at the University of Washington in Seattle found and reported "a characteristic pattern of malformation" in eight newborns of chronic alcoholic women. E. 1977 was a significant year in the history of FAS. 1. First gathering of scientists working in the field of FAS, sponsored by the National Institute of Alcohol Abuse and Alcoholism (NIAAA). 2. Later in 1977, it was reported that "moderate use of alcohol during pregnancy could be hazardous to the unborn child." F. After the 1977 gathering and announcements, studies, both animal and human, proliferated. 1. In 1963, there were three studies on alcohol and pregnancy. 2. In 1979, there were in excess of 200 studies. 3. In 1985, there were more than 2,000 studies reported. G. In 1981, there was a warning by the Surgeon General of the U.S. (See sample lesson plans.) 1. "Women who are pregnant or considering pregnancy should <u>abstain</u> from the use of alcohol." 2. This statement was not widely supported or applauded. 3. Many, but not all, physicians today recommend complete abstinence from alcohol during pregnancy.

III. FAS is Only the Tip of the Iceberg:
Alcohol-Related Birth Defects (ARBD)

ALCOHOL-RELATED BIRTH DEFECTS (ARBD) ARE CONDITIONS CAUSED BY MATERNAL DRINKING DURING PREGNANCY, YET ARE NOT AS SEVERE OR AS NOTICEABLE AS FAS.

OBJECTIVES	CONTENT OUTLINE
The students will be able to: 1. ...differentiate between FAS and ARBD. 2. ...state physical symptoms of ARBD. 3. ...give reasons why ARBD needs to be studied longitudinally in order to determine the full extent of the problem.	A. Physical and behavioral deficits in children that have been linked to alcohol use during pregnancy, yet are not full-blown FAS, are termed Alcohol-Related Birth Defects (ARBD). 1. ARBD is more subtle than FAS. 2. ARBD children tend to show more behavioral symptoms than physical symptoms. B. Characteristics of ARBD may include one or a pair of the following: 1. growth retardation 2. facial abnormalities 3. central nervous system (CNS) involvement C. It is difficult to ascertain how many birth defects ("abnormalities of structure, function or metabolism," as defined by the March of Dimes) could be alcohol-related. D. The full effect of ARBD can only be determined by longitudinal studies. 1. Studying high-risk children through childhood, adolescent, and teen years.

OBJECTIVES	CONTENT OUTLINE
4. ...state the possible relationships of FAS and ARBD siblings in a family.	2. The subtle symptoms of ARBD may appear later in development. E. When newborns are diagnosed with FAS, older siblings are often found with ARBD. This is an indication that the mothers' drinking has been ongoing.

**IV. Alcohol Is Not the Only Problem:
The Effects of Licit and Illicit Drugs on Pregnancy**

ANY DRUG SUBSTANCE, INCLUDING ALCOHOL, TOBACCO, OVER-THE-COUNTER MEDICATION, OR PRESCRIPTION MEDICATIONS TAKEN DURING PREGNANCY CAN BE A CAUSE OF ADVERSE PREGNANCY OUTCOMES.

OBJECTIVES	CONTENT OUTLINE
The students will be able to: 1. ...describe the risks of taking any drug substance during any stage of pregnancy.	A. Any drug substance taken during pregnancy increases the risk of pre- and postnatal complications: 1. tobacco 2. prescription medications (such as sedative-hypnotics, tranquilizers); over-the-counter drugs 3. marijuana, cocaine, and other illicit drugs. B. When a pregnant woman drinks alcohol or abuses any drug, the developing fetus is also exposed since the substance flows directly from the mother's bloodstream through the placenta: 1. Harmful chemicals taken during the first 3 months of pregnancy can affect organ development or cause spontaneous abortion. 2. Continued abuse may affect the baby's brain growth and weight gain or cause premature delivery. 3. Substance abuse during pregnancy is also associated with inadequate prenatal care and consequently increased morbidity rates. 4. Drug dependency among pregnant women is associated with poor nutrition - which negatively impacts fetal development.

OBJECTIVES	CONTENT OUTLINE
2. ...discuss the effects of licit drugs, such as tobacco and prescription medications, on pregnancy and the fetus. 3. ...discuss the effects of illicit drugs (marijuana, cocaine, and heroin) on pregnancy and the fetus.	C. Effects of drug substances on the pregnant mother and fetus: 1. Tobacco a. Appears to increase the risk of life-threatening conditions to the mother: bleeding, miscarriages, premature delivery. b. Depressed fetal growth - smaller in length. c. Low birth weight - directly related to the number of cigarettes smoked daily. d. Increased risk of perinatal mortality: fetal and infant mortality higher among babies of mothers who smoked. e. Some studies show deficits in health, growth, behavior, and intellectual development. 2. Sedative Hypnotics and Tranquilizers (CNS Depressants) a. Have been linked to a variety of physical abnormalities. b. Decreased sucking response in newborns. 3. Marijuana a. Low birth weight. b. Infant exhibits withdrawal symptoms. c. Increased risk of Sudden Infant Death Syndrome (SIDS), or crib death.

OBJECTIVES	CONTENT OUTLINE
35	4. Cocaine a. Increased risk of miscarriage. b. Constriction of blood vessels in the placenta cuts the flow of nutrients and oxygen and may thereby result in growth impairment. c. Increased risk of premature delivery. d. Constriction of blood vessels causes rapid heartbeat, increase in blood pressure, and possible intrauterine stroke. e. Increased risk of exposure to AIDS if substance is taken intravenously. f. Infants tend to have lower birth weights, tend to be shorter, and have a smaller head circumference. g. Cocaine-addicted infants undergo psychological, as well as physical, withdrawal: (1) Infants remain irritable for 6-8 weeks after birth. (2) Infants do not respond well to their environment for 2-3 months. (3) Maternal bonding is made difficult by inability to provide comfort and nurturing to an irritable, unpredictable baby. h. Increased risk of SIDS.
	36

OBJECTIVES

CONTENT OUTLINE

5. Opiates (Heroin)
 - a. Mothers exhibit problems during pregnancy: hepatitis, miscarriage, gestational diabetes, premature labor, still-birth.
 - b. Increased risk of contact with AIDS virus if substance is taken intravenously.
 - c. Infants have low birth weights and smaller head circumference.
 - d. Higher mortality rates due to obstetrical complications, lack of prenatal care, and low birth weights.
 - e. Infants show difficulty responding to the human voice and touch.
 - f. Infants' withdrawal symptoms include tremors and respiratory distress.
 - g. Increased risk of SIDS.

V. So You're Thinking about Getting Pregnant:

Don't Drink or Take Drugs

THERE IS INCREASING EVIDENCE WHICH INDICATES THAT DRUG AND ALCOHOL ABUSE BY BOTH THE PROSPECTIVE FATHER AND MOTHER PRIOR TO CONCEPTION MAY HAVE AN ADVERSE EFFECT ON PREGNANCY, AS WELL AS PRE- AND POSTNATAL DEVELOPMENT.

OBJECTIVES

The students will be able to:

1. ...discuss the current state of knowledge and beliefs concerning drug and alcohol use by both men and women prior to pregnancy.

2. ...discuss the most cautious approach to be used by prospective parents.

CONTENT OUTLINE

- A. Very little conclusive research on the detrimental effects of drug and alcohol use by males or females prior to conception and pregnancy.
 1. Limited research with male animals indicate possible risks:
 - a. reduced amount of sperm.
 - b. fewer and less viable offspring.
 2. A 1977 study revealed a decrease in sperm and sperm mobility in alcoholic males.
- B. Many women are pregnant weeks or even months before they are aware of it.
 1. Alcohol and/or drug use in the early weeks can cause great damage to the embryo.
 2. Some women (families) celebrate the news of the pregnancy with a party which may include the use of alcohol or other drugs.
- C. Whenever drinking is stopped during pregnancy, the risks of FAS and ARBD are decreased.
- D. Although there is no conclusive evidence at this time, the most cautious and only totally safe approach is for both prospective parents to refrain from the use, and especially the abuse, of any drug prior to pregnancy.

VI. Prevention of Fetal Alcohol Syndrome and Fetal Alcohol and Drug Effects is the Goal:

Education is the Answer

EDUCATION ABOUT ALCOHOL USE AND ABUSE, AS WELL AS DRUG USE AND ABUSE, IS THE PRIMARY WEAPON IN PREVENTING FAS AND FETAL ALCOHOL AND DRUG EFFECTS.

OBJECTIVES	CONTENT OUTLINE
The students will be able to: 1. ...state why education is the best weapon in the battle against FAS and fetal alcohol and other drug effects. 2. ...discuss why physicians must be educated about FAS and fetal alcohol and other drug effects. 3. ...debate the pros and cons of requiring labels on alcoholic beverages warning about FAS and ARBD. 4. ...discuss the needs and problems of educating the women in the high-risk groups for FAS and ARBD.	A. FAS is among the three most common birth defects associated with mental retardation; it is the only one that is preventable: 1. The results of FAS are irreversible - it cannot be cured. 2. Education is the best form of prevention for FAS. B. In the 1985 National Health Interview Survey conducted by the National Center for Health Statistics, only 57 percent of persons under 45 years of age had ever heard of Fetal Alcohol Syndrome. Who needs to be educated: 1. Physicians - so they can alert and teach their patients about the risks of using drugs and alcohol during pregnancy. 2. Men and women of child-bearing age and younger - so they know the facts and risks of alcohol and drug use during pregnancy. C. Women of child-bearing age are the high-risk group. 1. Half of all female alcoholics are of child-bearing age.

OBJECTIVES	CONTENT OUTLINE
5. ...explain why education about FAS and ARBD can be helpful to women who are already drinking during their pregnancy.	2. Not all women who drink have problem pregnancies or FAS children, thus posing the following problems: a. Denial of the problem - "It will never happen to me." b. General disbelief in the health risks of drinking during pregnancy. 3. Women are now heavily targeted for marketing of alcoholic beverages. According to <u>Impact</u>, a liquor industry newsletter, women will spend \$30 billion on alcoholic beverages in 1994, as compared with \$20 billion in 1984. 4. Regular drinking is common among high school girls, and a sizeable number engage in heavy drinking. Current studies show that teenagers are remarkably uninformed about the causal relationship between pregnancy and drinking and are at high risk of bearing children with FAS and ARBD. 5. Women do not have to be alcoholics to expose the embryo and fetus to adverse effects of alcohol. 6. Whenever drinking is stopped during pregnancy, the risks of FAS and consequences of alcohol exposure are decreased. The probability of having a child with FAS or ARBD increases directly with the amount and frequency of alcohol consumed. 7. It is estimated that 30-50 percent of pregnancies of HIV-positive mothers will result in an infected infant. 8. One in ten babies born in many urban areas of the United States have been exposed to cocaine in the womb, according to research conducted at the Perinatal Center for Chemical Dependence at Northwestern Memorial Hospital in Chicago. Even <u>one</u> use of cocaine during pregnancy puts the child at risk.

OBJECTIVES	CONTENT OUTLINE
6. ...estimate the costs of FAS and ARBD to society in both human and monetary terms.	D. Costs to society: The human dimension alone is cause for concern about FAS/ARBD, but the actual dollars are an impetus to work toward further prevention of FAS/ARBD. An analysis of costs associated with FAS produced the following 1980 estimates: \$14.9 million for health treatment of babies born with FAS; \$670 million in total treatment costs for the 68,000 FAS children under the age of 18; \$760 million in treatment costs for 160,000 FAS adults; and \$510.5 million in indirect productivity losses. (Source: National Clearinghouse for Alcohol Information, 1985.) 1. Health costs due to alcohol abuse and alcoholism have risen in the recent past due to the inclusion of FAS/ARBD cases. 2. FAS/ARBD children will grow up to be adults needing care and treatment. 3. In addition to treatment, there will be additional costs for special education, training, and support services needed.

9088j

SAMPLE LESSON PLANS

UNIT: FETAL ALOCHOL SYNDROME/FETAL ALCOHOL AND OTHER DRUG EFFECTS
TOPIC: FAS: What Is It? (Section I of Teacher's Guide-Introductory Lesson)

GRADE: 7-9

The learner will demonstrate the ability to:

1. Define Fetal Alcohol Syndrome (FAS).
2. State the major symptoms of FAS.
3. Describe the possible effects of alcohol on the growing fetus.
4. Discuss why there does not appear to be a safe time to drink during pregnancy.

PRIOR TO CLASS:

1. Obtain a large picture of a healthy baby (magazines, family pictures, etc.). Mount and display in classroom.
2. Construct a pretest knowledge inventory for students.
3. Develop a vocabulary list (fetus, growth retardation, anomalies, central nervous system, miscarriage, placenta, mental retardation, pregnancy, syndrome).
4. Obtain supporting materials (handouts, pamphlets) from the March of Dimes or Department of Health.

RESOURCES

ACTIVITY

- Large picture of baby
- Pretest
- Teacher's Guide, Section I
- Flipchart

1. Call students' attention to the large picture of a healthy baby. Ask them to brainstorm a description of the baby using different adjectives. Write all adjectives on the board or flipchart, without evaluation. "Healthy" is the description you are looking for; so, if necessary, use hints to elicit "healthy" from the students.
2. After students' flow of descriptive terms slows down, call an end to the brainstorming.
3. Ask the students this question, "If you were the parent (father or mother) of this baby, OR if you are ever expecting a baby in the future, which one of these descriptive characteristics (refer to list on board) would be the most important to the baby and you? Why?" -- Discuss answers briefly. Focus special attention on "healthy."
4. Introduce the unit to students by explaining that because a baby's health is so important, they will be considering information which will influence the important choices future parents can make to increase the likelihood of better beginnings for their babies.

RESOURCES	ACTIVITY
	5. Distribute the Pretest (knowledge inventory) to be completed in 10 minutes. Collect all papers. (The same test should be re-administered at the end of the unit, for comparison.) 6. Display the vocabulary list on the flipchart or blackboard. Explain that you will be referring to these new terms throughout the unit. They will be defined as the lesson progresses. (Wherever possible, elicit "own words" definitions. Have one student record the definitions on the flipchart for the class.) 7. Define FAS; explain its cause, characteristics, and prevalence. (Adapt the content in the Teacher's Guide, Section I, to suit the class.) 8. Conclude by having students write a personal reaction to the lesson in their notebooks or journal.

UNIT: FETAL ALOCHOL SYNDROME/FETAL ALCOHOL AND OTHER DRUG EFFECTS

TOPIC: Prevention of FAS/Fetal Alcohol and Other Drug Effects is the Goal: Education is the Answer (Section VI of Teacher's Guide - Concluding Lesson)

GRADE: 7-9

The learner will demonstrate the ability to:

1. State why education is the best weapon to prevent FAS and fetal alcohol and other drug effects.
2. Create a warning label for alcoholic beverages; create a poster slogan.
3. Explain why education can be helpful to women who are already drinking during pregnancy.

PRIOR TO CLASS:

1. Using Teacher's Guide, Section VI, construct a "Fact Sheet."
2. Post the vocabulary list which has evolved over the course of the unit.
3. Prepare the Posttest.

RESOURCES	ACTIVITY
• Vocabulary List on Flipchart • Fact Sheet • Teacher's Guide, Section VI	1. Using the posted vocabulary list, discuss with students what they have learned in this unit. Encourage students to summarize their thoughts in a single sentence or two. 2. Discuss the role of education in the prevention of FAS and Alcohol-Related Birth Defects (ARBD); discuss the movement to require warning labels on alcoholic beverages. 3. Place students in small groups, and distribute the "Fact Sheet." Ask each group to develop its own "warning label" <u>or</u> poster slogan for the prevention of FAS or fetal alcohol and other drug effects using the fact sheet or notes from previous classes. (Allow 15-20 minutes) 4. Allow each group to share its warning label or poster slogan. 5. After all the reports are shared, the teacher can make closure by comparing and contrasting the approaches of the various groups. The teacher may also remind students that throughout this unit, they have considered a good deal of information concerning choices which parents can make to improve the chances of having a healthy child. The facts have indicated that alcohol and other drugs can be very

RESOURCES

ACTIVITY

harmful to the unborn baby. Encourage students to use the decision-making process they have learned (in other substance abuse prevention classes) to make thoughtful and deliberate choices about their lives.

6. Remind students that sometimes we need help either in making decisions or in carrying out those we have made. Brainstorm people and places to go to for help: parents, grandparents, substance awareness coordinator, school counselor, hospital, or other agency.
7. Distribute copies of the Posttest. Students will have 10 minutes to complete and return to the teacher. (If a healthy discussion took up too much time, the posttest can be completed at the beginning of the next class period.)

UNIT: FETAL ALOCHOL SYNDROME/FETAL ALCOHOL AND OTHER DRUG EFFECTS

TOPIC: History of FAS: Pioneers of the 1970s, '80s, and Beyond (Teacher's Guide, Section II)

GRADE: 10-12

The learner will demonstrate the ability to:

1. Discuss early views on alcohol use during pregnancy.
2. Identify significant events in the '70s concerning the recognition of FAS as a public health problem.
3. Discuss the impact of the Surgeon General's 1981 Advisory.

PRIOR TO CLASS:

1. Review Teacher's Guide, Section II.
2. Reproduce Surgeon General's Advisory.

RESOURCES

ACTIVITY

- Copies of Surgeon General's Advisory
- Teacher's Guide, Section III

1. Distribute the copies of Surgeon General's Advisory on Alcohol and Pregnancy, explaining that it is a good summary of the effects of alcohol on pregnancy. Read the advisory with the class, making sure they understand the terminology.
2. Ask students to state the basic message of this advisory in two sentences:
 - a. Because alcohol consumption during pregnancy can harm the fetus, pregnant women (and women considering pregnancy) should not consume alcohol in beverages, food, or drugs (medications).
 - b. Health professionals should share the above message with women who are pregnant or considering pregnancy and should ask such women about their use of alcohol.
3. Make the transition to the history of FAS. Note with the class the date of the Surgeon General's Advisory - 1981. Ask the class why they think the advisory was released in 1981. Did the alcohol-pregnancy issue surface at that time? Conduct an open-ended discussion.

RESOURCES	ACTIVITY
	4. Review the historical references and early research leading up to modern research and the definition of FAS in 1973. Points to discuss: a. On what were early warnings based? b. Why do you think there was little discussion and warning about alcohol and pregnancy in the U.S. in the 1920s and '30s? c. Why do you think the Surgeon General's Advisory was controversial when first released? d. Have you heard from relatives or friends that physicians, nurses, etc., are telling their patients about FAS, as advised by the Surgeon General? e. Where did students get the information they had about alcohol and pregnancy prior to this unit? 5. Conclude by noting that the 1970s gave a new name to an old problem. Throughout history, a connection between alcohol and adverse pregnancy outcomes has been noted.

UNIT: FETAL ALOCHOL SYNDROME/FETAL ALCOHOL AND OTHER DRUG EFFECTS

TOPIC: Alcohol Is Not the Only Problem: The Effects of Licit and Illicit Drugs on Pregnancy (Teacher's Guide, Section IV)

GRADE: 10-12

The learner will demonstrate the ability to:

1. Describe the risks of taking any chemical substance during any stage of pregnancy.
2. Discuss the effects of licit drugs, such as tobacco and prescription medications, on pregnancy and the fetus.
3. Discuss the effects of illicit drugs on pregnancy and the fetus.

PRIOR TO CLASS:

1. Assign students to bring in a recent article on the effects of drug use (other than alcohol) during pregnancy.
2. Review Teacher's Guide, Section IV.

RESOURCES	ACTIVITY
• Teacher's Guide, Section IV	1. Have several students discuss the newspaper/magazine articles they selected on the effects of drug use during pregnancy. Discuss common drugs cited, common issues, etc. 2. Conduct an open-ended discussion regarding the current debate over the criminalization of substance abuse in pregnancy and punishment of substance-abusing pregnant women. 3. Review with students the effects of licit and illicit drugs on the developing fetus. (From Teacher's Guide, Section IV.) 4. Follow the review by asking students to write or share an "I believe..." or "I learned..." statement.

JB/mh:1/9378j

SURGEON GENERAL'S ADVISORY ON ALCOHOL AND PREGNANCY

FDA Drug Bulletin, July 1981, Volume 11, No. 2

The Surgeon General advises women who are pregnant (or considering pregnancy) not to drink alcoholic beverages and to be aware of the alcoholic content of foods and drugs.

A recent report to the President and Congress summarizes current scientific knowledge about health hazards associated with alcohol consumption, including those during pregnancy. The report concludes that alcohol consumption during pregnancy, especially in the early months, can harm the fetus.

Among the findings of the report are the following:

- Significantly decreased birth weight has been observed among the children of some women who average only one ounce of absolute alcohol (two standard drinks) per day during pregnancy.
- Sizeable and significant increases in spontaneous abortions have been observed at reported alcohol consumption levels as low as one ounce of absolute alcohol twice a week.
- A woman who consumes alcohol at amounts consistent with a diagnosis of alcoholism risks bearing a child with a specific cluster of severe physical and mental defects known as fetal alcohol syndrome (FAS). (See September-October 1977 Drug Bulletins.) This syndrome is frequently associated with mental retardation, and is also characterized by central nervous system disorders, growth deficiencies, a specific cluster of facial abnormalities, and other malformations, particularly

skeletal, urogenital, and cardiac. Many of these characteristics are individually subtle but are readily apparent to trained dysmorphologists.

- Even if she does not bear a child with full FAS, a woman who drinks heavily is more likely to bear a child with one or more of the birth defects included in the syndrome. Microcephaly, associated with mental impairment, is one of the more common of these defects.

The reported effects on pregnancy outcome appear to be independent of potentially confounding variables including nutrition and smoking.

In addition, it has been demonstrated that alcohol readily enters breast milk and thus is transmitted to the nursing infant. Heavy alcohol consumption is known to decrease the mother's milk.

Research to establish the mechanisms by which alcohol consumption affects fetal and neonatal growth and development is underway.

Health professionals are urged to inquire routinely about alcohol consumption by patients who are pregnant or considering pregnancy. This information should be included in their medical records.

Each patient should be told about the risk of alcohol consumption during pregnancy and advised to not drink alcoholic beverages and to be aware of the alcoholic content of foods and drugs.

Interested practitioners can obtain material about techniques for obtaining accurate drinking information from patients, as well as written material for pregnant patients, by contacting the National Clearinghouse for Alcohol Information (NCALI).

RESOURCES **Assistance**

National Institute on Alcohol Abuse
and Alcoholism
5600 Fishers Lane
Rockville, Maryland 20857

National Clearinghouse for Alcohol Information
P.O. Box 2345
Rockville, Maryland 20852
(301) 468-2600

National Association for Prenatal Addiction
Research and Education (NAPARE)
11 E. Hubbard Street, Suite 200
Chicago, Illinois 60611
(312) 329-2512

March of Dimes Birth Defects Foundation
Central Jersey Chapter
Officer Center
666 Plainsboro, New Jersey 08635
Plainsboro, New Jersey 08635
(Or contact the chapter nearest you.)

New Jersey Department of Health
Division of Alcoholism and Drug Abuse
129 East Hanover Street
Trenton, New Jersey 08625
(609) 292-0729

Family Center
Thomas Jefferson University Hospital
Suite 6105, New Hospital
11th and Chestnut Streets
Philadelphia, PA 19107

0579x

Print Materials

Eddy, Cristen C. and Ford, John L. (Editors)
Alcoholism in Women
Dubuque, Iowa: Kendall Hunt Publishing Company 1980
(See Chapter 8 especially.)

Robe, Lucy Barry
Just So It's Healthy
Minneapolis, Minnesota: CompCare Publications, 1982 (Revised)
(Complete and highly recommended.)

Welsnack, Sharon C. and Linda J. Beckman
Alcohol Problems in Women
New York: The Guilford Press, 1984
(See Chapter 6 especially)

"Preventing Alcohol-Related Birth Defects"
Alcohol Health and Research World, Fall, 1985.
U.S. Department of Health and Human Services,
Alcohol, Drug Abuse, and Mental Health Administration
National Institute on Alcohol Abuse and Alcoholism
Rockville, Maryland

Films and Videos

"One For My Baby" (28 minutes) - Film 16 mm.
Friends of WHA-TV, Inc.
821 University Avenue
Madison, Wisconsin 53706
(608) 263-2133

"Journey to Birth" (21 minutes) - Video
March of Dimes Birth Defects Foundation
Central Jersey Chapter
Office Center
666 Plainsboro Road
Plainsboro, New Jersey 08635
(609) 275-1201
(Or contact your local chapter)